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MONDAY, MAY 16, 1988

Telephony

INTEGRATING VOICE AND DATA COMMUNICATIONS

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What Do Users Want?

ICA BOARD MEMBERS SOUND OFF

Six end users answer this often-asked telecom question in a lively roundtable discussion

ILLINOIS BELL FIRE CRIPPLES CHICAGO AREA

Phones dead for 35,000 after fire ravages CO

ISDN: AN EMBARRASSMENT?

BellSouth's Strohmeyer urges industry stance

MONDAY, MAY 16, 1988 Volume 214, No. 20

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INTEGRATING VOICE AND DATA COMMUNICATIONS

Six movers and shakers in the end user community speak on the record about the Federal Communications Commission, the local exchange carriers and equipment manufacturers. Cover design by Michael Sonnenfeld, photos by Don Tremain.

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Business users hunger for more data services

Advanced services like voice messaging, video teleconferencing and facsimile also are increasingly popular. LANs and packet switching are going strong, too

LARRY LANNON, Editor, and CZATDANA INAN, Marketing Development and Research Director

The tastes of business users are changing in the late 1980s.

Once they hungered for PBXs, key systems, modems and statistical multiplexers. Today they thirst for local area networks, private packet switching systems, network management systems, video teleconferencing and voice messaging. And facsimile technology continues to be more appetizing than ever.

But the old staple—network services—continues to do the best.

The Facts

Table 1 shows that network services continue to be the largest single cost item for the corporate community. And it is growing. Expenditures for network services grew from $124.5 billion in 1986 to $133.3 billion last year. They are expected to reach $142.8 billion in 1988 and $152.9 billion in 1989.

Customer premises equipment, or CPE, for voice communications also continues to grow. The business community spent $7.1 billion on voice CPE in 1986 and $7.6 billion in 1987. It is expected to spend $8 billion this year and $8.7 billion next year.

Expenditures for data CPE went from $4 billion to $4.9 billion from 1986 to 1987. This year, businesses are expected to spend $6 billion on data communications CPE. Next year, the figure should exceed the $7 billion mark.

In terms of growth, network services expenditures are growing at a 7% compound annual growth rate in 1988-92, voice CPE at a 4.8% CAGR and business CPE at a whopping 13.5% CAGR.

Behind the Numbers

These growth figures reflect the continuing importance of the public network to the business community as well as the increasingly central role data communications plays in daily business life. The relationship between the two is far from coincidental.

Traditionally, the public network has been a relatively inflexible analog network devoted largely to carrying voice traffic. Modems were necessary to accommodate data traffic, complicating and limiting the use of the public network for data. The volume of data traffic, of course, is a function of the total population of computers and the need to interconnect computers within an organization. As businesses increasingly rely on computers for essential operations, the need to connect computers within an organization increases. Hence, the volume of data traffic increases.

The public network is changing at precisely the same time, if not at precisely the same pace, that the deployment and use of computers in the business world is changing. These twin changes will condition one another.

The public network is increasingly a flexible, high-bandwidth, digital tool well-suited to carrying large volumes of data traffic. The transition from the old analog network, which was hostile to large-scale data applications, to a new, integrated, intelligent, digital network will take years to complete. But the companies that control the public network are well aware of the value of their fundamental resource and the need to adapt it to contemporary conditions as rapidly as possible. They also recognize they don't have to upgrade the *entire* network immediately to capture a large share of the business community's data traffic.

The business community, on the other hand, is increasingly interested in multidimensional data communications. Rather than be-

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Glossary

ACD	Automatic call distributor
CO	Central office
CAGR	Compound annual growth rate
CPE	Customer premises equipment
CSU	Circuit switching unit
DSU	Data service unit
IVDT	Integrated voice-data terminal
LAN	Local area network
MTS	Message telecommunications service
PBX	Private branch exchange
PDN	Public data network
RIP	Rest in peace
WATS	Wide area telecommunications service

TABLE 1 THE OUTLOOK IN 1988 (IN BILLIONS)

	1986	1987	1988	1989	1988-92 CAGR*
Network Services	$124.5	$133.3	$142.8	$152.9	7.0%
Business Voicecom CPE	$7.1	$7.6	$8.0	$8.7	4.8%
Business Datacom CPE	$4.0	$4.9	$6.0	$7.2	13.5%

Source: Dataquest
*Compound Annual Growth Rate (CAGR)

FIGURE 1 NETWORK SERVICES IN 1988

Source: Dataquest
Graphic by *Telephony*
a: Local Services total by Dataquest, breakout by *Telephony*
b: *Telephony* estimate: Of total, 30% to 35% is access, 45% to 50% is usage (including WATS, 800 services, toll), balance includes private lines and CO services, including Centrex, and other, such as miscellaneous inside wiring.
c: does not include local exchange carrier PDNs

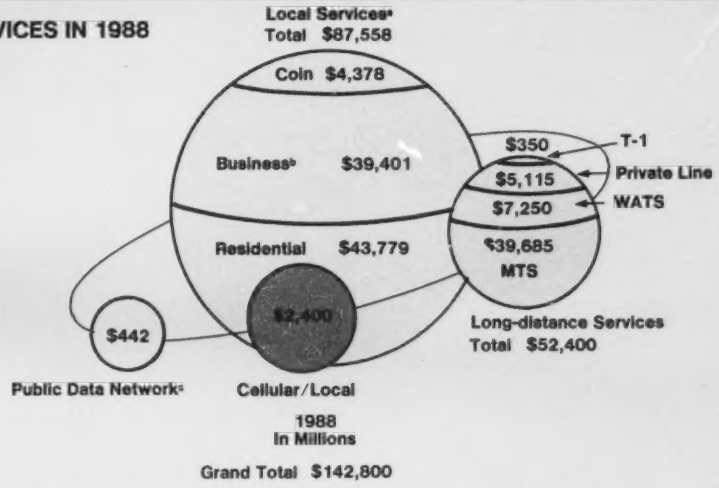

FIGURE 2 BUSINESS VOICE COMMUNICATIONS CPE MARKET

Source: Dataquest
Graphic by *Telephony*
a: business single-line & proprietary sets

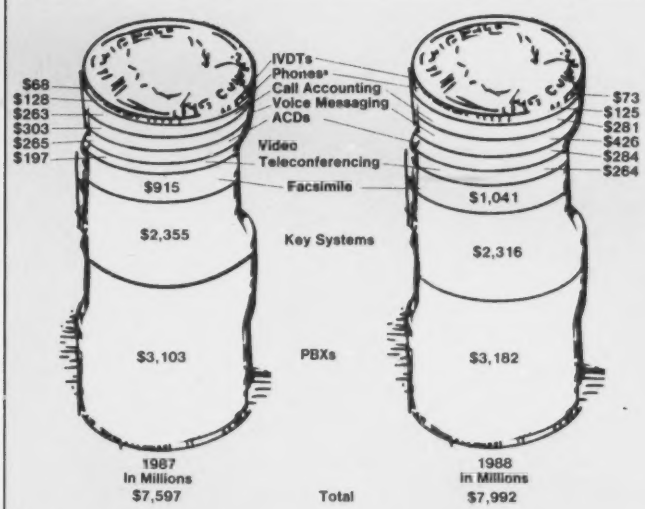

TABLE 2 THE FASTEST GROWING VOICE CPE MARKETS

	1988-92 CAGR*
Video Teleconferencing	26.5%
Voice Messaging	23.6%
Facsimile	17.8%
ACDs	7.1%
Phones	6.9%
Call Accounting	4.4%
IVDTs	2.9%
PBXs	2.6%
Key Systems	0.9%

Source: Dataquest
*Compound Annual Growth Rate (CAGR)

FIGURE 3 BUSINESS DATA COMMUNICATIONS CPE MARKET

Source: Dataquest
Graphic by *Telephony*

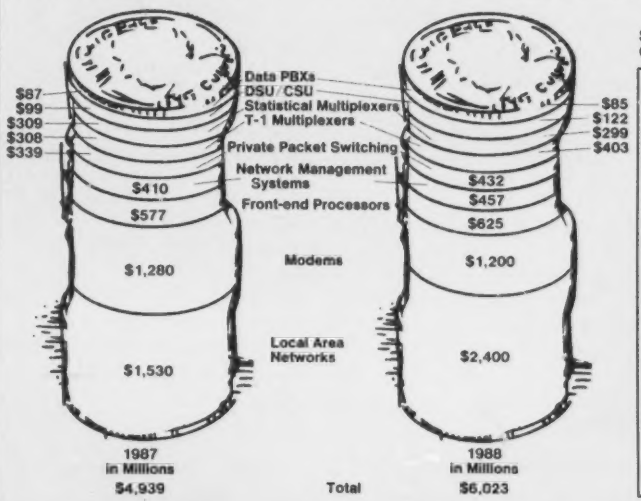

TABLE 3 WINNERS & LOSERS IN THE DATACOM CPE MARKET

	1988-92 CAGR*
Local Area Networks	22.4%
Private Packet Switching	17.0%
Network Management Systems	13.8%
T-1 Multiplexers	12.9%
DSU/CSU	12.7%
Front-End Processors	6.7%
Modems	−6.2%
Statistical Multiplexers	−5.5%
Data PBXs	−4.7%

Source: Dataquest
*Compound Annual Growth Rate (CAGR)

ing content with linking the computers within an organization together in the interests of achieving maximum operational efficiency and centralized management control of information, businesses now are actively attempting to link their computers with the computers of their customers and suppliers. In terms of their use, computers are becoming more like telephones: a means to communicate with all other computers in the world.

This change increases the horizons for data traffic geometrically. Since it also will involve multiple organizations, it will limit the utility of private networks controlled and accessible only by individual organizations. The public network is stationed at the crossroads of the business world, ready to facilitate electronic travel in any direction.

The role of the computer is expanding, not just because there are more computers. They are being used differently.

The transformation of the computer from a management tool to a multipurpose business tool, from an information machine that only serves the internal needs of a business to a machine that connects the internal world with the entire external world, is a fundamental change not only in the larger business community. It is a change with enormous implications for the communications business.

The surge of data traffic once loomed as a threat to the public network operators and delivered a golden opportunity to private network vendors. Now the business community's need for omnidirectional data communications promises to turn the tables. But only if the business community gets what it needs from public network operators.

Needs

Figure 1 reviews the geography of network service expenditures last year. Note that the expenditures for public data network, or PDN, services do not include the local exchange carrier's PDNs.

Figure 2 focuses on expenditures in the voice CPE market. In 1987, the business community spent $7.6 billion on voice CPE. It is expected to spend nearly $8 billion this year, an increase of 5.2%.

Expenditures for data CPE lag well behind voice CPE outlays. But they are gaining fast. Figure 3 summarizes the facts.

Last year, the business community spent $4.9 billion on data CPE. This year, it is expected to spend $6 billion, an increase of 22%.

The rate of growth in data CPE expenditures exceeds the growth rate in voice CPE expenditures by a multiple of four. You don't have to be a genius to figure out where the business community's needs lie today.

Analysis of products within the voice and data CPE categories confirms the importance of these trends. As Table 2 shows, the fastest growing voice CPE products are video teleconferencing and voice messaging. The long-time workhorses of the voice CPE market are slowing down.

Video teleconferencing is growing at a CAGR of 26.5% and voice messaging is right behind at 23.6%. PBXs show a CAGR of 2.6% and key systems of only 0.9%.

Even within the voice CPE market, voice alone won't cut it. The business community clamors for new capabilities. As the more prescient key system and PBX manufacturers realize, the future of their products depend on their ability to serve as enablers for a variety of new services, particularly data services of all kinds and voice services that do not begin and end with a two-way conversation.

Interestingly enough, integrated voice-data terminals show an anemic CAGR of 2.9%. The IVDT dream received a lot of attention several years ago. The IVDT was going to take technology to the desktop once and for all. Right now, it looks like technology is getting to the desktop, but IVDTs are not. May IVDTs RIP.

Once again, the difference between functionality and a particular product concept is crucial, as the IVDT case demonstrates. Users are particular about functionality and indifferent to product.

On the data CPE side, local area networks and private packet switching systems are showing the most leg today. LANs have a CAGR of 22.4% and private packet systems of 17%. Again, the focus is on data, data and more data.

Tomorrow's Technology

Network management systems are showing a healthy CAGR of 13.8%. Look for that number to grow, particularly if the public network gathers its strength in the business community.

As the business community comes to rely more on data traffic and networks grow more complex, the issue of network management becomes ever more pressing. This is the pivotal issue facing public network operators.

With the advent of private networks, business users have grown accustomed to greater control over their networks. They recognize the power of a flexible, digital public network to address wholly or in part their growing communications needs, but they will never settle for less control than they have now. In fact, as their businesses grow more dependent on network solutions, their demand for network management will increase correspondingly.

No one business can hope to truly control the public network or even, perhaps, the part of the public network it uses. But businesses will demand the ability to manage their specific service or functionality. They also will require higher levels of security as they turn to the public network to transmit confidential competitive information.

The ability of the public network operators to provide that management capability by allowing business users to "view" the portion of the public network they depend on and participate in managing that resource is an issue today. Eventually, "partitioning" the public network to satisfy users' network management, control and security requirements will become the most important technical and operational issue facing public network operators.

If public network operators don't rise to the challenge, they risk compromising a position in the market that, right now, looks more promising than ever. ■